

ALKBH3 (H-270): sc-135117

BACKGROUND

ALKBH3 (ALKB, alkylation repair homolog 3), also known as ABH3, PCA-1 (prostate cancer antigen-1) or DEPC-1, is a 286 amino acid member of the ALKB family of proteins and functions as a dioxygenase with a preference for RNA and single stranded DNA substrates. ALKBH3 is one of many homologs of the *Escherichia coli* protein, ALKB. ALKBH3 is expressed in a wide variety of tissues and localizes to the cytoplasm and the nucleus. It associates with iron and 2-oxoglutarate, coupling the oxidation of substrates to the conversion of 2-oxoglutarate into succinate and CO₂. Via oxidative demethylation, ALKBH3 repairs 1-methyladenine and 3-methylcytosine lesions in alkylated DNA and RNA. Its activity is stimulated by ascorbate. Two isoforms exist for ALKBH3 due to alternative splicing of the gene.

REFERENCES

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- Ougland, R., et al. 2004. ALKB restores the biological function of mRNA and tRNA inactivated by chemical methylation. *Mol. Cell* 16: 107-116.
- Mishina, Y., et al. 2004. Interaction of human and bacterial ALKB proteins with DNA as probed through chemical cross-linking studies. *Nucleic Acids Res.* 32: 1548-1554.
- Falnes, P.O., et al. 2004. Substrate specificities of bacterial and human ALKB proteins. *Nucleic Acids Res.* 32: 3456-3461.
- Konishi, N., et al. 2005. High expression of a new marker PCA-1 in human prostate carcinoma. *Clin. Cancer Res.* 11: 5090-5097.
- Ringvoll, J., et al. 2006. Repair deficient mice reveal mABH2 as the primary oxidative demethylase for repairing 1meA and 3meC lesions in DNA. *EMBO J.* 25: 2189-2198.

CHROMOSOMAL LOCATION

Genetic locus: ALKBH3 (human) mapping to 11p11.2; Alkbh3 (mouse) mapping to 2 E1.

SOURCE

ALKBH3 (H-270) is a rabbit polyclonal antibody raised against amino acids 1-270 mapping at the N-terminus of ALKBH3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ALKBH3 (H-270) is recommended for detection of ALKBH3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

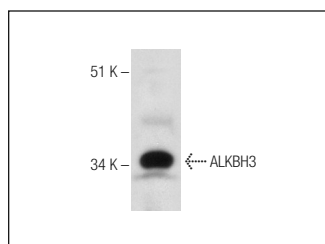
ALKBH3 (H-270) is also recommended for detection of ALKBH3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ALKBH3 siRNA (h): sc-96711, ALKBH3 siRNA (m): sc-141020, ALKBH3 shRNA Plasmid (h): sc-96711-SH, ALKBH3 shRNA Plasmid (m): sc-141020-SH, ALKBH3 shRNA (h) Lentiviral Particles: sc-96711-V and ALKBH3 shRNA (m) Lentiviral Particles: sc-141020-V.

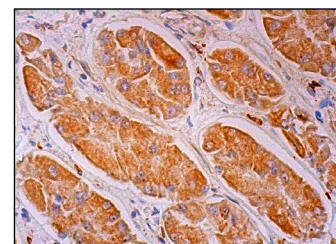
Molecular Weight of ALKBH3: 33 kDa.

Positive Controls: mouse cerebellum extract: sc-2403 or K-562 whole cell lysate: sc-2203.

DATA



ALKBH3 (H-270): sc-135117. Western blot analysis of ALKBH3 expression in mouse cerebellum tissue extract.



ALKBH3 (H-270): sc-135117. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **ALKBH3 (B-7): sc-376520**, our highly recommended monoclonal alternative to ALKBH3 (H-270).